

Please type a plus sign (+) inside this box → [ ]

Express Mail Label No. EL497838970US

PTO/SB/01 (12-97)

Approved for use through 9/30/00. OMB 0651-0032

Patent and Trademark Office ; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☒ Declaration Submitted with Initial Filing **OR** ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	1870-00400
First Named Inventor	MARIANI, Roberto
<b>COMPLETE IF KNOWN</b>	
Application Number	/Not Yet Assigned
Filing Date	Concurrently Herewith
Group Art Unit	UNKNOWN
Examiner Name	UNKNOWN

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**Face Direction Estimation Using a Single Gray-Level Image**

the specification of which

(Title of the Invention)

☒ is attached hereto  
OR

☐ was filed on (MM/DD/YYYY) [ ] as United States Application Number or PCT International

Application Number [ ] and was amended on (MM/DD/YYYY) [ ] (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
9905429-8	SINGAPORE	03/11/1999 11/3/99	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → +

PTO/SB/01 (12-97)

Approved for use through 9/30/00. OMB 0651-0032  
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

## DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

☐ Customer Number

OR

☐ Registered practitioner(s) name/registration number listed below

Place Customer  
Number Bar Code  
Label here

Name	Registration Number	Name	Registration Number

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number  or Bar Code Label

OR ☐ Correspondence address below

Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))				Family Name or Surname			
Roberto				MARIANI			
Inventor's Signature						Date	2/2/2000
Residence: City	Singapore	State		Country	Singapore	Citizenship	France
Post Office Address	2A Rainbow Mansion, One Tree Hill #01-05, 268847 SINGAPORE						
Post Office Address							
City	Singapore	State		ZIP	268847	Country	Singapore

☐ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

Please type a plus sign (+) inside this box → +

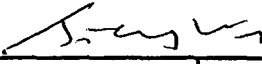
PTO/SB/02A (3-97)

Approved for use through 9/30/98. OMB 0651-0032  
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

## DECLARATION

**ADDITIONAL INVENTOR(S)**  
**Supplemental Sheet**  
Page 1 of 1

<b>Name of Additional Joint Inventor, if any:</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Jiankang				WU			
Inventor's Signature				Date	28/2/00		
Residence: City	Singapore	State		Country	Singapore	Citizenship	China
Post Office Address	Blk 51, Teban Gardens Road, #06-565						
Post Office Address							
City	Singapore	State		ZIP	600051	Country	Singapore
<b>Name of Additional Joint Inventor, if any:</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature				Date			
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		ZIP		Country	
<b>Name of Additional Joint Inventor, if any:</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle [if any])				Family Name or Surname			
Inventor's Signature				Date			
Residence: City		State		Country		Citizenship	
Post Office Address							
Post Office Address							
City		State		ZIP		Country	

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

**SUPPLEMENTAL DECLARATION****SOLE/JOINT INVENTOR  
ORIGINAL/SUBSTITUTE/CIP**

As a below named inventor, I hereby declare that: my residence, post office address, and citizenship are as stated below next to my name. I believe I am the original, first, and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: **"FACE DIRECTION ESTIMATION USING A SINGLE GRAY-LEVEL IMAGE"** as described in the specification of patent application Serial No. 09/528,279, filed March 17, 2000.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above; that I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application; that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months prior to this application; and that I acknowledge the duty to disclose information of which I am aware which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations § 1.56(a). Such information is material when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant has taken or may take in:
  - (I) opposing an argument of unpatentability relied on by the Office, or
  - (II) asserting an argument of patentability.

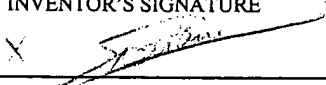

I hereby claim foreign priority benefits under Title 35, United States Code § 119 of any foreign application(s) for patent or inventor's certificates listed below and have also identified below any foreign application(s) having a filing date before that of the application(s) on which priority is claimed:

COUNTRY	APPLICATION NUMBER	DATE OF FILING	PRIORITY CLAIMED UNDER 35 USC 119
SINGAPORE	9905429-8	November 3, 1999	YES

I hereby claim the benefit under Title 35 United States Code § 120 and/or § 119(e) of any United States application(s) listed below and, insofar as any subject matter of any claim of this application is not disclosed in the prior United States Application, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations § 1.56(a) which occurred between the filing date of the prior application and the national PCT International filing date of this application:

N/A

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE OR FIRST INVENTOR	INVENTOR'S SIGNATURE	DATE
<b>Roberto MARIANI</b>	X 	X May 30 <sup>th</sup> , 2000
RESIDENCE	CITIZENSHIP	
<b>Blk 56, Farrer Road, Spanish Village, #01-65, Singapore, 268847</b>	<b>FRANCE</b>	
POST OFFICE ADDRESS		
<b>SAME AS ABOVE</b>		
FULL NAME OF SECOND JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE
<b>Jiankang WU</b>	X 	X May 30 <sup>th</sup> , 2000
RESIDENCE	CITIZENSHIP	
<b>Blk 51, Teban Gardens Road, #06-565, Singapore, 600051</b>	<b>CHINA</b>	
POST OFFICE ADDRESS		
<b>SAME AS ABOVE</b>		

1870-00402



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

MAY 18, 2000

PTAS

CONLEY, ROSE & TAYON, P.C.  
JONATHAN M. HARRIS  
P.O. BOX 3267  
HOUSTON, TEXAS 77253-3267



\*101302641A\*

**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 03/17/2000

REEL/FRAME: 010637/0245  
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
MARIANI, ROBERTO

DOC DATE: 02/28/2000

ASSIGNOR:  
WU, JIANKANG

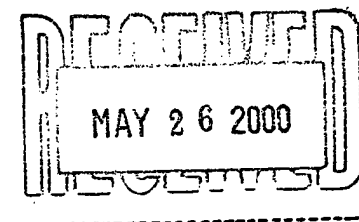
DOC DATE: 02/28/2000

ASSIGNEE:  
KENT RIDGE DIGITAL LABS  
21 HENG MUI KENG TERRACE  
SINGAPORE 119613, SINGAPORE

SERIAL NUMBER: 09528279  
PATENT NUMBER:

FILING DATE:  
ISSUE DATE:

MARY BENTON, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS



Practitioner's Docket No.

1870-00400**PATENT**For: ☒ U.S. and/or ☒ Foreign RightsFor: ☒ U.S. Application orFor: ☐ U.S. Provisional ApplicationFor: ☐ U.S. PatentFor: ☐ PCT Application

By: Multiple Inventors

**ASSIGNMENT OF INVENTION (MULTIPLE INVENTORS)**

In consideration of the payment by ASSIGNEE to ASSIGNOR of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration,

ASSIGNORS (Inventors):

BLK 56, FARER ROAD, SCAMON VILLAGE  
 #01-05, SINGAPORE 268847  
 2A RAINBOW MANSION ONE TREE  
 HILL, SINGAPORE 248670,  
 REPUBLIC OF SINGAPORE

ROBERTO MARIANI

(type or print name of inventors)

FRANCE

Address

Nationality

BLK 51, TEBAN GARDENS ROAD,  
 #06-565, SINGAPORE 600051,  
 REPUBLIC OF SINGAPORE

JIANKANG WU

(type or print name of inventors)

CHINA

Address

Nationality

(type or print name of inventors)

Address

Nationality

hereby sells, assigns and transfers to  
ASSIGNEE:

21 HENG MUI KENG TERRACE,  
SINGAPORE 119613, REPUBLIC OF  
SINGAPORE

KENT RIDGE DIGITAL LABS  
(type or print name of ASSIGNEE)

\_\_\_\_\_  
Address

SINGAPORE  
Nationality

and the successors, assigns and legal representatives of the ASSIGNEE

(complete one of the following)

- ☒ the entire right, title and interest  
☐ an undivided \_\_\_\_\_ percent ( \_\_\_\_\_ %) interest  
for the United States and its territorial possessions

(check the following box, if foreign rights are also to be assigned)

☒ and in all foreign countries, including all rights to claim priority,  
in and to any and all improvements which are disclosed in the invention entitled:

**FACE DIRECTION ESTIMATION USING A SINGLE GRAY LEVEL IMAGE**

Name of inventor(s) ROBERTO MARIANI; JIANKANG WU

(check and complete (a), (b), (c), (d), (e), (f) or (g))

and which is found in (37 C.F.R. § 3.21)

- (a) ☒ U.S. patent application executed on even date herewith  
(b) ☐ U.S. patent application executed on \_\_\_\_\_  
(c) ☐ U.S. provisional application naming the above inventor(s) for the  
above entitled invention.  
☐ Express mail label no.: \_\_\_\_\_  
Mailed: \_\_\_\_\_  
(d) ☐ To comply with 37 C.F.R. 3.21 for recordal of this assignment, I an  
ASSIGNOR signing below, hereby authorize and request my  
attorney to insert below the filing date and application number when  
they become known.  
(d) ☐ U.S. application no. \_\_\_\_\_  
filed on \_\_\_\_\_  
(e) ☐ International application no. PCT/ / \_\_\_\_\_  
(f) ☐ U.S. patent no. \_\_\_\_\_ issued \_\_\_\_\_  
☐ A change of address to which correspondence is to be sent regarding  
patent maintenance fees is being sent separately.

(also check (g), if foreign application(s) is also being assigned)

- (g) ☒ and any legal equivalent thereof in a foreign country, including the  
right to claim priority

and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, renewal, or substitute thereof, and as to letters patent any reissue or re-examination thereof

ASSIGNOR hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

ASSIGNOR further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation or proceeding related thereto and will promptly execute and deliver to ASSIGNEE or its legal representatives any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue and enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof.

IN WITNESS WHEREOF, We have hereunto set hand and seal this (X) 28/2/2020  
Date of signing

ROBERTO MARIANI

(type name of Inventor)

(X)

Signature of INVENTOR

JIANKANG WU

(type name of Inventor)

(X)

Signature of INVENTOR

**WARNING:** The date of signing must be the same as the date of execution of the application, if item (a) was checked above.

[ ] Notarization or Legalization Page Added.

**NOTE** No witnessing, notarization or legalization is necessary. If the assignment is notarized or legalized then it will only be prima facie evidence of execution. 35 USC 261. Use next page if notarization is desired